

Applicants: Grasso *et al.*

- Sub B7  
cont.
- (c) Xaa<sub>3</sub> may be selected from the group consisting of Ala or Thr; or  
(d) the leptin peptide contains any combination of (a) or (b) or (c).

a3  
cont  
Sub D1

7. (Amended) The peptide of claim 1, wherein the peptide is an OB-3 peptide selected from the group consisting of: amino acid residues <sup>116</sup>Ser-Cys-Ser-Leu-Pro-Gln-Thr<sup>122</sup> of mouse leptin protein (SEQ ID NO:2) [or] and <sup>116</sup>Ser-Cys-His-Leu-Pro-Trp-Ala<sup>122</sup> of human leptin protein [SEQ ID NO:18], and fragments, derivative, homologs and analogs thereof.

12. (Amended) A peptide comprising amino acid residues of the leptin protein of any one of SEQ ID NOS:1 and 17, selected from the group consisting of:

- Sub B8
- (i) amino acid residues 21-35 (SEQ ID NO:3);  
(ii) amino acid residues 31-45 (SEQ ID NO:4);  
(iii) amino acid residues 41-55 (SEQ ID NO:5);  
(iv) amino acid residues 51-65 (SEQ ID NO:6);  
(v) amino acid residues 61-75 (SEQ ID NO:7);  
(vi) amino acid residues 71-85 (SEQ ID NO:8);  
(vii) amino acid residues 81-95 (SEQ ID NO:9);  
(viii) amino acid residues 91-105 (SEQ ID NO:10);  
(ix) mouse amino acid residues 116-122 (SEQ ID NO:2);  
(x) human amino acid residues 116-122 (SEQ ID NO:18); [and]

a4

and fragments, derivatives, homologs and analogs thereof.

13. (Amended) The leptin peptide of claim 1, wherein said homology to any one of the sequences set forth in SEQ ID NOS:2-[16] 10 and 18 is greater than 85%.

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18. (Amended) A pharmaceutical composition comprising any one of the leptin peptides of [claims 1-17] claim 1, and a pharmaceutically acceptable carrier.

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31. (Amended) [The peptide of any one of claims 1-17,] Any one of the peptides of claim 1, wherein the peptide contains at least one D-amino acid substitution.

Sub BIO  
32. (Amended) [The peptide of any one of claims 1-17,] Any one of the peptides of claim 1, wherein the peptide contains at least one variant amino acid substitution selected from the group comprising C<sub>α</sub>-methylamino acids, N<sub>α</sub>-methylamino acids and α,β-unsaturated amino acids.

a6  
cont  
33. (Amended) [The peptide of any one of claims 1-17,] Any one of the peptides of claim 1, wherein the peptide is cyclized.

34. (Amended) A linear coupled peptide having at least two peptides derived from discontinuous regions of the full length leptin protein of SEQ ID NOS:1 or 17, wherein at least one of the coupled peptides is a peptide according to [any one of claims 1-17] claim 1.

a7  
39. (Amended) A kit comprising in one or more containers [a] at least one leptin peptide according to [any one of claims 1-17] claim 1, a nucleic acid [according to claim 26] encoding at least one leptin peptide of claim 1, or an antibody that recognizes [a leptin peptide according to any one of claims 36-38] at least one leptin peptide of claim 1.

Cancel the following claims: 19-30, 35-38 and 40-42.

Add the following claims:

Sub DE  
a8  
--43. A purified leptin peptide, and fragment, homologs, analogs and derivatives thereof, wherein the peptide has the following characteristics:  
(a) it is a substantially homogenous preparation; and  
(b) it is comprised of a peptide sequence of at least 90% homology to any one of the sequences set forth in SEQ ID NOS:11, 12, 13, 15 and 16; wherein the leptin peptide modulates body mass.

44. The leptin peptide of claim 43, wherein the leptin peptide can cross the blood brain barrier.

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45. The peptide of claim 43, wherein the peptide is a human peptide.

46. A pharmaceutical composition comprising any one of the leptin peptides of claim 43, and a pharmaceutically acceptable carrier.

47. The peptide of claim 43, wherein the peptide contains at least one variant amino acid substitution selected from the group comprising C<sub>α</sub>-methylamino acids, N<sub>α</sub>-methylamino acids, D-amino acids and  $\alpha,\beta$ -unsaturated amino acids.

48. A linear coupled peptide having at least two peptides derived from discontinuous regions of the full length leptin protein of SEQ ID NOS:1 or 17, wherein at least one of the coupled peptides is a peptide according to claim 43.

49. A kit comprising in one or more containers at least one leptin peptide according to claim 43, a nucleic acid encoding at least one leptin peptide of claim 43, or an antibody that recognizes at least one leptin peptide of claim 43.

50. A purified leptin peptide, and fragments, homologs, analogs and derivatives thereof, wherein the peptide has the following characteristics:

- (a) it is a substantially homogenous preparation; and
- (b) it is comprised of a peptide sequence of at least 95% homology to the sequence set forth in SEQ ID NO:14; wherein

the leptin peptide modulates body mass.

51. The leptin peptide of claim 50, wherein the leptin peptide can cross the blood brain barrier.

52. The peptide of claim 50, wherein the peptide is a human peptide.

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53. A pharmaceutical composition comprising the leptin peptides of claim 50, and a pharmaceutically acceptable carrier.

54. The peptide of claim 50, wherein the peptide contains at least one variant amino acid substitution selected from the group comprising C<sub>α</sub>-methylamino acids, N<sub>α</sub>-methylamino acids, D-amino acids and  $\alpha,\beta$ -unsaturated amino acids.

55. The peptide of claim 50, wherein the peptide is cyclized.

56. A linear coupled peptide having at least two peptides derived from discontinuous regions of the full length leptin protein of SEQ ID NOS:1 or 17, wherein at least one of the coupled peptides is a peptide according to claim 50.

57. A kit comprising in one or more containers a leptin peptide according to claim 50, a nucleic acid encoding a leptin peptide of claim 50, or an antibody that recognizes a leptin peptide of claim 50.

58. A purified peptide comprising amino acid residues 106 through 120 of the human leptin protein of SEQ ID NO:17.

59. A purified peptide comprising amino acid residues 126 through 140 of the human leptin protein of SEQ ID NO:17.

60. A purified peptide comprising the amino acid residues of SEQ ID NO:2.

61. A purified peptide comprising the amino acid residues of SEQ ID NO:18. --

### RESPONSE

In response to the Restriction Requirement mailed December 19, 2000, in the above-identified application, Applicants elect Group I, including Claims 1-18, 31-34 and 39, drawn to a